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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/598,517

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Paul R. Kruesi

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EXAMINER

BUCHANAN, JACOB

ART UNIT

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1795

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/598,517	Applicant(s) KRUESI, PAUL R.	
	Examiner Jacob Buchanan	Art Unit 1795	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 8/25/2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 and 10-28 is/are pending in the application.
- 4a) Of the above claim(s) 10-28 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☒ Claim(s) 1-8 and 10-28 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>01 Sept 2006</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Restriction is required under 35 U.S.C. 121 and 372.

This application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1.

In accordance with 37 CFR 1.499, applicant is required, in reply to this action, to elect a single invention to which the claims must be restricted.

Group I, claim(s) 1-8, drawn to a fuel cell.

Group II, claim(s) 10-14, drawn to a regeneration cell.

Group III, claim(s) 15-17 and 26-28, drawn to a method of producing hydrogen.

Group IV, claim(s) 18-25, drawn to a method of forming carbon dioxide.

2. The inventions listed as Groups I-IV do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons: while Groups I-IV contain the same technical feature, i.e. an anode, a cathode, a membrane, and an electrolyte, said features do not offer contribution over the prior art (see Cooper et al. (US 2002/0106549) comprising a fuel cell (10), an anode (14), a cathode (16), a membrane (18), and electrolyte (24), and a carbon fuel (22)) and is therefore not a special technical feature which makes a contribution, considered as a whole, over the prior art. Said technical features of Groups I and IV differ from the technical features of Groups II and III which involves an anode, cathode, membrane, and electrolyte for a

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regenerative cell instead of a fuel cell. It is also noted that these special technical features do not offer contribution over the prior art (see Cooper et al. (US 2002/0106549)).

3. Applicant is advised that the reply to this requirement to be complete must include (i) an election of a species or invention to be examined even though the requirement may be traversed (37 CFR 1.143) and (ii) identification of the claims encompassing the elected invention.

The election of an invention or species may be made with or without traverse. To preserve a right to petition, the election must be made with traverse. If the reply does not distinctly and specifically point out supposed errors in the restriction requirement, the election shall be treated as an election without traverse.

4. During a telephone conversation with Robert Traver on August 25, 2009 a provisional election was made **without** traverse to prosecute the invention of Group I, claims 1-8. Affirmation of this election must be made by applicant in replying to this Office action. Claims 10-25 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

5. The examiner has required restriction between product and process claims. Where applicant elects claims directed to the product, and the product claims are subsequently found allowable, withdrawn process claims that depend from or otherwise require all the limitations of the allowable product claim will be considered for rejoinder. All claims directed to a nonelected process invention must require all the limitations of an allowable product claim for that process invention to be rejoined.

In the event of rejoinder, the requirement for restriction between the product claims and the rejoined process claims will be withdrawn, and the rejoined process claims will be fully examined for patentability in accordance with 37 CFR 1.104. Thus, to be allowable, the rejoined claims must meet all criteria for patentability including the requirements of 35 U.S.C. 101, 102, 103 and 112. Until all claims to the elected product are found allowable, an otherwise proper restriction requirement between product claims and process claims may be maintained. Withdrawn process claims that are not commensurate in scope with an allowable product claim will not be rejoined. See MPEP § 821.04(b). Additionally, in order to retain the right to rejoinder in accordance with the above policy, applicant is advised that the process claims should be amended during prosecution to require the limitations of the product claims. **Failure to do so may result in a loss of the right to rejoinder.** Further, note that the prohibition against double patenting rejections of 35 U.S.C. 121 does not apply where the restriction requirement is withdrawn by the examiner before the patent issues. See MPEP § 804.01.

Specification

6. The use of the trademarks NAFION, DSA, TEFLON as seen on pages 3, 7, 9 has been noted in this application. It should be capitalized wherever it appears and be accompanied by the generic terminology.

Although the use of trademarks is permissible in patent applications, the proprietary nature of the marks should be respected and every effort made to prevent their use in any manner which might adversely affect their validity as trademarks.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claims 1-3, 5, and 7-8 are rejected under 35 U.S.C. 102(b) as being anticipated by Pesavento (US 6,200,697).

Regarding claim 1, Pesavento discloses a fuel cell (1) (abstract, Figure 1) comprising:

- An anode (19)
- A cathode (15)
- A membrane that separates the anode (19) and the cathode (15) (C5/L16-25)
- An electrolyte (27)
- A carbon fuel (21, 33)

Regarding claim 2, Pesavento discloses all of the claim limitations as set forth above. Pesavento additionally discloses the fuel cell wherein the carbon comprises an activated carbon (C5/L62-67).

Regarding claim 3, Pesavento discloses all of the claim limitations as set forth above. Pesavento additionally discloses the fuel cell wherein the carbon comprises carbon recovered from organic waste (C4/L21-28, C5/L62-67).

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Regarding claim 5, Pesavento discloses all of the claim limitations as set forth above. Pesavento additionally discloses the fuel cell wherein the cathode is selected from the group consisting of stainless steel, catalytic carbon, porous nickel, oxygen-reacting cathodes, and graphite (C3/L23-28).

Regarding claim 7, Pesavento discloses all of the claim limitations as set forth above. Pesavento additionally discloses the fuel cell wherein the electrolyte (27) comprises a chemical selected from the group consisting of an alkaline hydroxide and hydrated alkaline earth chloride (C5/L5-9).

Regarding claim 8, Pesavento discloses all of the claim limitations as set forth above. Pesavento additionally discloses the fuel cell wherein the electrolyte (27) comprises a chemical selected from the group consisting of sodium hydroxide, potassium hydroxide, hydrated magnesium chloride, hydrated calcium chloride, hydrated strontium chloride, magnesium hydroxide, magnesium oxide, iron carbonate, manganese carbonate, cerium carbonate, and mixtures thereof (C5/L5-9).

9. Claims 1-2 and 4-5 are rejected under 35 U.S.C. 102(b) as being anticipated by Tao (US 2002/0015877).

Regarding claim 1, Tao discloses a fuel cell (10) ([0020], Figure 1) comprising:

- An anode (16)
- A cathode (20)

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- A membrane that separates the anode (16) and the cathode (20) ([0007], [0020], see “electrolyte contacts both the anodic section and the cathodic section”, Figures 1-2)
- An electrolyte (18)
- A carbon fuel ([0006])

Regarding claim 2, Tao discloses all of the claim limitations as set forth above.

Tao additionally discloses the fuel cell wherein the carbon comprises an activated carbon ([0023], see “anode selected from... activated carbon”, [0005], [0040], see “employs a carbon anode as a fuel source”).

Regarding claim 4, Tao discloses all of the claim limitations as set forth above.

Tao additionally discloses the fuel cell wherein the anode (16) is selected from the group consisting of catalytically-enhance carbon, nickel metals and graphite ([0023]).

Regarding claim 5, Tao discloses all of the claim limitations as set forth above.

Tao additionally discloses the fuel cell wherein the cathode is selected from the group consisting of stainless steel, catalytic carbon, porous nickel, oxygen-reacting cathodes, and graphite ([0028]).

10. Claims 1, 3, and 5-6 are rejected under 35 U.S.C. 102(b) as being anticipated by Cooper et al. (US 2002/0106549).

Regarding claim 1, Cooper discloses a fuel cell (10) ([0021], Figure 1) comprising:

- An anode (14)

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- A cathode (16)
- A membrane (18) that separates the anode (14) and the cathode (16)
- An electrolyte (24)
- A carbon fuel (22)

Regarding claim 3, Cooper discloses all of the claim limitations as set forth above. Cooper additionally discloses the fuel cell wherein the carbon comprises carbon recovered from organic waste ([0032])

Regarding claim 5, Cooper discloses all of the claim limitations as set forth above. Cooper additionally discloses the fuel cell wherein the cathode is selected from the group consisting of stainless steel, catalytic carbon, porous nickel, oxygen-reacting cathodes, and graphite (claims 25 and 28).

Regarding claim 6, Cooper discloses all of the claim limitations as set forth above. Cooper additionally discloses the fuel cell wherein the membrane (18) comprises at least one proton permeable membrane and a ceramic cloth ([0026]).

Conclusion

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jacob Buchanan whose telephone number is (571)270-1186. The examiner can normally be reached on Monday - Thursday 7:30-5:00 and alternating Fridays 7:30-4:00.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Basia Ridley can be reached on (571)272-1453. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/J. B./
Examiner, Art Unit 1795

/PATRICK RYAN/
Supervisory Patent Examiner, Art Unit 1795